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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,208	05/14/2001	Nanette C. Jensen	10013325-1	9811

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER


WEST, JEFFREY R

ART UNIT	PAPER NUMBER
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2857

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/855,208	Applicant(s) JENSEN ET AL.	
	Examiner Jeffrey R. West	Art Unit 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the arguments presented in the Appeal Brief filed on 14 January 2004, PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 7-10, 13-16, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,902,994 to Lisson et al. in view of U.S. Patent No. 4,945,225 to Gamgee and U.S. Patent No. 6,642,492 to Shiota et al.

Lisson teaches an apparatus for calibrating a linear image sensor such as an array of sensors of a charge coupled device (column 1, lines 10-12) in a scanning apparatus (column 3, lines 1-2) including a light source (column 2, lines 61-63) controlled by a corresponding control circuit for applying first and second intensities of the light source at first and second times (column 3, lines 12-13) through the altering of voltage or current levels applied to the light source by predefined amounts (column 3, lines 42-45) to sequence the intensity of the of the light source from zero amplitude to a maximum level causing the image sensor to saturate (column 3, lines 45-49), wherein the image sensor array produces a corresponding first and second outputs based on the source intensity (column 3, lines 20-27).

While Lisson does disclose that altered currents are supplied by a control circuit to step the intensity of a light source until the saturation of the light sensor, Lisson does not specifically include a corresponding means for determining the occurrence of the saturation or specify that the image sensor be part of a scanner apparatus comprising a processor and memory for incrementing and decrementing the driving source of an LED as the light source.

Gamgee teaches a signal discriminator including a light source and a sensing optical detector circuit that produces an output corresponding to the intensity of the light source (column 3, lines 16-25) wherein saturation of the sensing optical detector circuit is detected by producing first and second magnitude outputs, at first and second times, related to first and second light source intensities (column 2, lines 49-58) and determining when a difference between the first and second outputs are

not significant as compared to a predetermined significance value/threshold (column 2, line 65 to column 3, line 11).

Shiota teaches a calibration apparatus for light emitting elements in an optical scanning printer (column 1, line 66 to column 2, line 2) comprising an optical head including an LED light source (column 3, lines 7-12) a memory storage device, a driving control logic circuit coupled to the LED light source (column 4, lines 62-65), and a processing logic circuit (column 5, line 26) wherein the LED light source is incremented and decremented predetermined amounts by a driving source to control the intensity of emitted light (column 5, lines 5-10) in accordance with the processing circuit and memory storage device logic in order to obtain the light source at a desired intensity/brightness (column 6, lines 20-25). Shiota also teaches comparing a sensor output to a threshold to determine when the output reaches a desired value (column 5, lines 30-36).

It would have been obvious to one having ordinary skill in the art to modify the invention of Lisson to include a corresponding means for determining the occurrence of the saturation or specify that the image sensor be part of a scanner with an LED as the light source, as taught by Gamgee, because Lisson teaches altering a current supplied to a light source until saturation is detected, but provides no method for determining such saturation and the invention of Gamgee suggests that the combination would have provided a method for determining the saturation when an intensity is altered up to a saturation point (column 1, lines 61-64) by employing a

common relationship (column 1, lines 64-68) thereby accurate determination of when the maximum intensity has been reached.

It would have been obvious to one having ordinary skill in the art to modify the invention of Lisson to include a processor and memory for incrementing and decrementing the driving source of an LED as the light source, as taught by Shiota, because the invention of Lisson teaches altering the driving current of a light source up to a maximum value and Shiota suggests that the combination would have provided a corresponding method for providing complete control for adjusting the driving source until the intensity output reaches a desired optimum value (column 5, lines 30-41 and 52-61).

4. Claims 5, 6, 11, 12, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lisson et al. in view of Gamgee and Shiota et al. and further in view of U.S. Patent No. 4,982,203 to Uebbing et al.

As noted above, Lisson in combination with Gamgee and Shiota teaches many of the features of the claimed invention, and while combination teaches incrementing/decrementing the current in order to obtain an optimum value, the combination does not specifically teach determining the amount the current is to be changed using percentages.

Uebbing teaches a method and apparatus for improving the uniformity of an LED printhead by compensating for the degradation in light output of a plurality of LEDs (column 4, lines 66-68) comprising obtaining the light output measures of two

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different pulse-width values and comparing the difference between these values to determine the percentage increase, of the second measure relative the first measure, needed to meet the desired output level deviation/difference (column 5, lines 1-22).

It would have been obvious to one having ordinary skill in the art to modify the invention of Lisson, Gamgee, and Shiota to include determining the amount the current is to be changed using percentages, as taught by Uebbing, because Uebbing suggests a method that would quickly and accurately determine the required change in intensity, and corresponding current modification, using a functionally equivalent method in order to adjust the light output to the optimum/desired value of Lisson, Gamgee, and Shiota (column 5, lines 1-32).

Response to Arguments

5. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

U.S. Patent No. 5,495,329 to Anderson, II et al. teaches adaptive lamp control including determining a degree of which a lamp is changing by obtaining a first

illumination value, a second illumination value and comparing the difference between the illumination values to a limit.

U.S. Patent No. 6,650,443 to Izumi teaches an apparatus and method for reading images and computer-readable storage medium storing an image processing program including determining when a sensing array is saturated because an output of the array does not change linearly with respect to changes in the luminance of a lamp.

U.S. Patent No. 4,408,231 to Bushaw et al. teaches a method and apparatus for calibrating a linear array scanning system including determining the saturation of a sensing array.

U.S. Patent Application Publication No. 2002/0163583 to Jones teaches a system and method for capturing color images that extends the dynamic range of an image sensor wherein the saturation point of the image sensor is defined as the maximum amount of light beyond which the electrical response of the optical detector does not change.

U.S. Patent Application Publication No. 2002/0003582 to Kadohara et al. teaches a focus state detection apparatus with sensing device controls wherein saturation is determined by comparing the difference between two output voltages to a predefined threshold.

U.S. Patent No. 6,357,658 to Garczynski et al. teaches an apparatus and methods for scanning documents including a photosensor array selected as a charge coupled device.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. West whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jrw
June 1, 2004


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